



SLOVENSKI STANDARD SIST EN 2947:2009

01-maj-2009

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Ta slovenski standard je istoveten z: EN 2947:2006

ICS:

49.025.10 Jekla Steels

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EUROPEAN STANDARD

EN 2947

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2006

ICS 49.025.10

English Version

Aerospace series - Steel FE-PA3004 (X10CrNi18-09) - Air melted - Non heat treated - Cold drawn wire - a or D ≤ 2,3 mm

Série aérospatiale - Acier FE-PA3004 (X10CrNi18-09) -
Élaboré à l'air - Non traité - Fils étirés à froid - a ou D ≤ 2,3
mm

Luft- und Raumfahrt - Stahl FE-PA3004 (X10CrNi18-09) -
Lufterschmolzen - Nicht wärmebehandelt - Kaltgezogener
Draht - a oder D ≤ 2,3 mm

This European Standard was approved by CEN on 18 October 2006.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Foreword

This document (EN 2947:2006) has been prepared by the Aerospace and Defence Industries Association of Europe - Standardization (ASD-STAN).

After enquiries and votes carried out in accordance with the rules of this Association, this Standard has received the approval of the National Associations and the Official Services of the member countries of ASD, prior to its presentation to CEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2007, and conflicting national standards shall be withdrawn at the latest by June 2007.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

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Introduction

This standard is part of the series of EN metallic material standards for aerospace applications. The general organization of this series is described in EN 4258.

This standard has been prepared in accordance with EN 4500-5.

1 Scope

This standard specifies the requirements relating to:

Steel FE-PA3004 (X10CrNi18-09)
Air melted
Non heat treated
Cold drawn wire
 a or $D \leq 2,3$ mm

for aerospace applications.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 2043, *Aerospace series — Metallic materials — General requirements for semi-finished product qualification (excluding forgings and castings)*. ¹⁾

EN 4258, *Aerospace series — Metallic materials — General organization of standardization — Links between types of EN standards and their use*.

EN 4500-5, *Aerospace series — Metallic materials — Rules for drafting and presentation of material standards — Part 5: Specific rules for steels*. ¹⁾

EN 4700-4, *Aerospace series — Steel and heat resisting alloys — Wrought products — Technical specification — Part 4: Wire*. ¹⁾

¹⁾ Published as ASD Prestandard at the date of publication of this standard.

EN 2947:2006 (E)

1	Material designation	Steel FE-PA3004 (X10CrNi18-09)										
2	Chemical composition %	Element	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Fe
		min.	0,05	–	–	–	–	16,0	–	6,0	–	Base
		max.	0,15	1,5	2,00	0,035	0,015	19,0	0,75	9,5	0,35	
3	Method of melting	Air melted										
4.1	Form	Wire										
4.2	Method of production	Cold drawn										
4.3	Limit dimension(s)	mm	a or $D \leq 2,3$									
5	Technical specification	EN 4700-4										

6.1	Delivery condition	Non heat treated										
	Heat treatment	–										
6.2	Delivery condition code	U										
7	Use condition	Delivery condition										
	Heat treatment	–										

Characteristics

8.1	Test sample(s)	See EN 4700-4.										
8.2	Test piece(s)	See EN 4700-4.										
8.3	Heat treatment	Delivery condition										
9	Dimensions concerned	mm	a or $D \leq 0,62$				$0,62 < a$ or $D \leq 0,81$			$0,81 < a$ or $D \leq 0,99$		
10	Thickness of cladding on each face	%	–									
11	Direction of test piece	L										
12	Temperature	θ	Ambient				Ambient			Ambient		
13	Proof stress	$R_{p0,2}$	$0,80 R_m \leq R_{p0,2} \leq 0,90 R_m$				$0,80 R_m \leq R_{p0,2} \leq 0,90 R_m$			$0,80 R_m \leq R_{p0,2} \leq 0,90 R_m$		
14	Strength	R_m	$\geq 1 750$				$\geq 1 650$			$\geq 1 550$		
15	Elongation	A	–									
16	Reduction of area	Z	–									
9	Dimensions concerned	mm	$0,99 < a$ or $D \leq 1,11$				$1,11 < a$ or $D \leq 1,79$			$1,79 < a$ or $D \leq 2,3$		
10	Thickness of cladding on each face	%	–									
11	Direction of test piece	L										
12	Temperature	θ	Ambient				Ambient			Ambient		
13	Proof stress	$R_{p0,2}$	$0,80 R_m \leq R_{p0,2} \leq 0,90 R_m$				$0,80 R_m \leq R_{p0,2} \leq 0,90 R_m$			$0,80 R_m \leq R_{p0,2} \leq 0,90 R_m$		
14	Strength	R_m	$\geq 1 450$				$\geq 1 350$			$\geq 1 250$		
15	Elongation	A	–									
16	Reduction of area	Z	–									
17	Hardness	–										
18	Shear strength	R_c	MPa									
19	Bending	k	–									
20	Impact strength	–										
21	Temperature	θ	°C									
22	Time	h		–								
23	Stress	σ_a	MPa									
24	Elongation	a	%									
25	Rupture stress	σ_R	MPa									
26	Elongation at rupture	A	%									
27	Notes (see line 98)	–										

36	Reverse torsion test for wires	–	See EN 4700-4.
37	Bending of wire (reverse bending)	–	See EN 4700-4.
		6	10 bends
		7	No cracks
43	Wrapping test for wires	–	See EN 4700-4.
		6	10 coils - a or D = wire dimension
		7	No cracks, or coarse grain
44	External defects	–	See EN 4700-4.
		1	Only visual is required
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95	Marking inspection	–	See EN 4700-4.
96	Dimensional inspection	–	See EN 4700-4.
98	Notes	–	–
99	Typical use	–	Wire theard insert and springs.

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100	-	Product qualification	-	See EN 2043.
				Qualification programme to be agreed between manufacturer and purchaser.
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